

Appl. No. 10/697,222  
Amendment Dated March 20, 2006  
Reply to Office Action dated Dec. 19, 2005

**Amendments to the Claims**

Please amend the claims as follows:

1. (amended) A lime-free admixture composition for hydraulic cement capable of use as a dry powder comprising, in combination: about 0.15 pounds to about 0.3 pounds of at least one a plurality of emulsifiers per 1600 pounds of hydraulic cement, wherein the emulsifier is selected from the group consisting of linear alkyl benzene sulfonate salts of an alkali metal cation of the Group I and II elements, linear alkyl benzene sulfonate salts of a non-metal cation, alpha olefin sulfonate salts of an alkali metal cation of the Group I and II elements, and alpha olefin sulfonate salts of a non-metal cation, about 0.25 pounds to about 1.25 pounds of at least one a plurality of toughening resins per 1600 pounds of hydraulic cement, wherein the toughening resin is selected from the group consisting of isoprene polymer rubbers, isoprene copolymer rubbers, styrene/butadiene/styrene copolymer rubbers and nitrile copolymer rubbers, emulsified by said plurality of emulsifiers, and about 0.1 pounds to about 1.6 pounds of at least one a plurality of accelerators per 1600 pounds of hydraulic cement, wherein the accelerator is selected from the group consisting of ammonium thiosulfate, sodium thiosulfate, lithium thiosulfate, potassium thiosulfate, barium thiosulfate, and calcium thiosulfate, for hardening a mixture comprising hydraulic cement, a plurality of aggregates, water and the lime free admixture composition.

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2. (amended) The lime-free admixture composition for hydraulic cement according to claim 1 further comprising about 0.15 pounds to about 3.2 pounds of at least one a plurality of air entraining agents per 1600 pounds of hydraulic cement, wherein the air entraining agent includes aliphatic polycarboxylates, alkylaryl polyoxyethylene ethanol, butyl and isopropyl alcohol, phenyltrimethyl siloxane, a linear alkyl benzene sulfonate salt of an alkali metal cation, a linear alkyl benzene sulfonate salt of a non-metal cation, an alpha olefin sulfonate salt of an alkali metal cation, and an alpha olefin sulfonate salt of a non-metal cation for providing microencapsulated air particles in the mixture comprising hydraulic cement, the plurality of aggregates, water and the lime-free admixture composition.

3. (amended) The lime-free admixture composition for hydraulic cement according to claim 1 further comprising about 2 pounds to about 4 pounds of at least one a plurality of overcoat resins per 1600 pounds of hydraulic cement wherein said overcoat resin comprises a combination of latex polyvinyl acetate polymers and copolymers, for providing a coating on an outer surface of a hardened product formed from the mixture comprising hydraulic cement, the plurality of aggregates, water and the lime-free admixture composition.

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4. (amended) The lime-free admixture composition for hydraulic cement according to claim 1 further comprising about 0.25 pounds to about 1.25 pounds of at least one a plurality of adhesive resins, wherein the adhesive resin is selected from the group consisting of isoprene polymer rubbers, isoprene copolymer rubbers, styrene-butadiene-styrene copolymer rubbers, nitrile copolymer rubbers, vinyl acetate/vinyl versatate copolymers, ethyl vinyl acetate copolymers, polyvinyl acetate polymers and polyvinyl acetate copolymers per 1600 pounds of hydraulic cement for enhancing adhesion of the mixture comprising hydraulic cement, the plurality of aggregates, water and the lime-free admixture composition to a plurality of substrates.

5. (amended) The lime-free admixture composition for hydraulic cement according to claim 1 further comprising less than about 4 pounds of at least one a plurality of adsorbents, wherein the adsorbent is selected from the group consisting of Perlite, calcium carbonate and diatomaceous earth, per 1600 pounds of hydraulic cement for providing a dry lime-free admixture composition when the lime-free admixture comprises liquid ingredients.

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6. (amended) The lime-free admixture composition for hydraulic cement according to claim 1 further comprising less than about 4.5 pounds of at least one a plurality of water retention agents per 1600 pounds of hydraulic cement, wherein said water retention agent is selected from the group consisting of isoprene polymer rubbers, isoprene copolymer rubbers, styrene-butadiene copolymer rubbers, polyvinyl acetate/vinyl versatate copolymers, polyethylene oxide polymers, hydroxylpropyl methyl cellulose polymers, hydroxylethyl methyl cellulose polymers, polyethylene glycol polymers, polyethylene glycol copolymers, polyacrylamide polymers, polyacrylamide copolymers, xanthan gums and guar gums, for reducing the amount of water that is added to the mixture comprising hydraulic cement, the plurality of aggregates and the lime-free admixture composition; and less than about 1.5 pounds of at least one a plurality of pumping aids per 1600 pounds of hydraulic cement, wherein said pumping aid is selected from the group consisting of polyethylene oxide polymers, hydroxylpropyl methyl cellulose polymers, hydroxyl ethyl methyl cellulose polymers, polyethylene glycol polymers, polyethylene glycol copolymers, polyacrylamide polymers, polyacrylamide copolymers, xanthan gums, guar gums, for providing rheological control of the mixture comprising hydraulic cement, the plurality of aggregates, water and the lime-free admixture composition.

7. (amended) The lime-free admixture composition for hydraulic cement according to claim 1 wherein said ~~plurality of~~ emulsifiers is selected from the group of surfactants consisting of anionic, cationic, amphoteric and non-ionic.

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8. (original) The lime-free admixture composition for hydraulic cement according to claim 7 wherein said anionic surfactants is selected from the group consisting of a linear alkyl benzene sulfonate salt of an alkali metal cation, a linear alkyl benzene sulfonate salt of a non-metal cation, an alpha olefin sulfonate salt of an alkali metal cation and an alpha olefin sulfonate salt of a non-metal cation.
9. (amended) The lime-free admixture composition for hydraulic cement according to claim 8 wherein said alkali metal cation is selected from the group consisting of lithium, sodium, potassium, magnesium and calcium, and said non-metal cation is selected from the group consisting of ammonium, alkyl ammonium, aryl ammonium, pyridine, pyrrole, piperidine, ~~derivatives of alkyl ammonium, derivatives of aryl ammonium, and~~ pyridine, ~~derivatives of pyrrole and derivatives of piperidine.~~
10. (original) The lime-free admixture composition for hydraulic cement according to claim 7 wherein said non-ionic surfactant comprises a mixture of alkyl aryl polyethoxylates, compounded silicone and linear alcohol.
11. (canceled) The lime-free admixture composition for hydraulic cement according to claim 1 wherein said plurality of toughening resins is selected from the group consisting of isoprene polymer rubbers, isoprene copolymer rubbers, styrene/butadiene/styrene copolymer rubbers and nitrile copolymer rubbers.

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12. (amended) The lime-free admixture composition for hydraulic cement according to claim 14 wherein said ~~plurality of~~ toughening resins is in crumb form.

13. (amended) The lime-free admixture composition for hydraulic cement according to claim 1 wherein said ~~plurality of~~ toughening resins comprises water redispersible polymers.

14. (original) The lime-free admixture composition for hydraulic cement according to claim 13 wherein said water redispersible polymers is selected from the group consisting of vinyl acetate/vinyl versatate copolymers, ethyl vinyl acetate copolymers, polyvinyl acetate polymers and polyvinyl acetate copolymers.

15. (amended) The lime-free admixture composition for hydraulic cement according to claim 1 wherein said ~~plurality of~~ accelerators is a thiosulfate salt of a cation selected from the group consisting of lithium, sodium, potassium, barium, calcium and ammonium.

16. (amended) The lime-free admixture composition for hydraulic cement according to claim 1 wherein said ~~plurality of~~ accelerators comprises a free radical initiator selected from the group consisting of peroxides, azo compounds and hydroperoxides.

17. (original) The lime-free admixture composition for hydraulic cement according to claim 16 wherein said free radical initiator is selected from the group consisting of dicumyl peroxide and benzoyl peroxide.

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18. (amended) The lime-free admixture composition for hydraulic cement according to claim 1 wherein said plurality of accelerators comprises a combination of ingredients comprising aliphatic polycarboxylates, alkylaryl polyoxyethylene ethanol, butyl and isopropyl alcohol, NEODOL.RTM. 91-6 and phenyltrimethyl siloxane.

19. (canceled) The lime-free admixture composition for hydraulic cement according to claim 2 wherein said plurality of air entraining agents comprises a combination of ingredients comprising aliphatic polycarboxylates, alkylaryl polyoxyethylene ethanol, butyl and isopropyl alcohol, NEODOL.RTM. 91-6 and phenyltrimethyl siloxane.

20. (canceled) The lime-free admixture composition for hydraulic cement according to claim 3 wherein said plurality of overcoat resins comprises a combination of latex polyvinyl acetate polymers and copolymers.

21. (canceled) The lime-free admixture composition for hydraulic cement according to claim. 4 wherein said plurality of adhesive resins for enhancing adhesion is selected from the group consisting of isoprene polymer rubbers, isoprene copolymer rubbers, styrene-butadiene-styrene copolymer rubbers, nitrile copolymer rubbers, vinyl acetate/vinyl versatate copolymers, ethyl vinyl acetate copolymers, polyvinyl acetate polymers and polyvinyl acetate copolymers.

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22. (canceled) The lime-free admixture composition for hydraulic cement according to claim 5 wherein said plurality of adsorbents providing a dry lime-free admixture composition is selected from the group consisting of Perlite, calcium carbonate and diatomaceous earth.
23. (canceled) The lime-free admixture composition for hydraulic cement according to claim 6 wherein said plurality of water retention agents is selected from the group consisting of isoprene polymer rubbers, isoprene copolymer rubbers, styrene-butadiene copolymer rubbers, polyvinyl acetate/vinyl versatate copolymers, polyethylene oxide polymers, hydroxylpropyl methyl cellulose polymers, hydroxylethyl methyl cellulose polymers, polyethylene glycol polymers, polyethylene glycol copolymers, polyacrylamide polymers, polyacrylamide copolymers, xanthan gums and guar gums, and said plurality of pumping aids is selected from the group consisting of polyethylene oxide polymers, hydroxylpropyl methyl cellulose polymers, hydroxyl ethyl methyl cellulose polymers, polyethylene glycol polymers, polyethylene glycol copolymers, polyacrylamide polymers, polyacrylamide copolymers, xanthan gums, guar gums, Perlite, calcium carbonate and diatomaceous earth.
24. (canceled) The lime-free admixture composition for hydraulic cement according to claim 1 wherein a combination of the lime-free admixture composition, hydraulic cement, a plurality of aggregates and water comprises a masonry composition selected from the group consisting of a concrete composition, a mortar composition, a stucco composition and a grout composition.



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25. (canceled) The lime-free admixture composition for hydraulic cement according to claim 1 wherein a combination of the lime-free admixture composition, hydraulic cement, a plurality of aggregates and water provides a stucco composition for applying the stucco composition directly to non-wire mesh wrapped expanded polystyrene substrates.

26. (amended) A lime-free admixture composition for hydraulic cement capable for use as a dry powder, comprising, in combination: a plurality of at least one emulsifiers selected from the group of surfactants consisting of anionic, cationic, amphoteric and non-ionic, a plurality of at least one toughening resins selected from the group consisting of isoprene polymer rubbers, isoprene copolymer rubbers, styrene/butadiene/styrene copolymer rubbers and nitrile copolymer rubbers, emulsified by said plurality of emulsifiers and a plurality of at least one accelerators wherein said accelerator comprises a thiosulfate salt of a cation selected from the group consisting of lithium, sodium, potassium, barium, calcium and ammonium, for hardening a mixture comprising hydraulic cement, a plurality of aggregates, water and the lime-free admixture composition.

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27. (amended) The lime-free admixture composition for hydraulic cement according to claim 26 further comprising ~~a plurality of~~ at least one overcoat resins wherein said overcoat resin comprises a combination of latex polyvinyl acetate polymers and copolymers for providing a coating on an outer surface of a hardened product formed from the mixture comprising hydraulic cement, the plurality of aggregates, water and the lime-free admixture composition.

28. (amended) A method for using lime-free admixture compositions to make masonry compositions comprising the steps of: providing ~~a plurality of~~ at least one emulsifiers selected from the group of surfactants consisting of anionic, cationic, amphoteric and non-ionic, a plurality of at least one toughening resins selected from the group consisting of isoprene polymer rubbers, isoprene copolymer rubbers, styrene/butadiene/styrene copolymer rubbers and nitrile copolymer rubbers emulsified by said ~~plurality of~~ emulsifiers ~~and a plurality of~~ at least one accelerators wherein said accelerator comprises a thiosulfate salt of a cation selected from the group consisting of lithium, sodium, potassium, barium, calcium and ammonium, for hardening a mixture comprising hydraulic cement, a plurality of aggregates, water and the lime-free admixture composition.

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29. (amended) The method for using lime-free admixture compositions to make masonry compositions according to claim 28 further comprising the steps of: providing ~~a plurality of~~ at least one air entraining agents wherein the air entraining agent includes aliphatic polycarboxylates, alkylaryl polyoxyethylene ethanol, butyl and isopropyl alcohol, phenyltrimethyl siloxane, a linear alkyl benzene sulfonate salt of an alkali metal cation, a linear alkyl benzene sulfonate salt of a non-metal cation, an alpha olefin sulfonate salt of an alkali metal cation, and an alpha olefin sulfonate salt of a non-metal cation; providing ~~a plurality of~~ at least one overcoat resins wherein said overcoat resin comprises a combination of latex polyvinyl acetate polymers and copolymers to coat an outer surface of a hardened product formed from the mixture comprising hydraulic cement, the plurality of aggregates, water and the lime-free admixture composition; providing a ~~plurality of~~ at least one adhesive resins wherein the adhesive resin is selected from the group consisting of isoprene polymer rubbers, isoprene copolymer rubbers, styrene-butadiene-styrene copolymer rubbers, nitrile copolymer rubbers, vinyl acetate/vinyl versatate copolymers, ethyl vinyl acetate copolymers, polyvinyl acetate polymers and polyvinyl acetate copolymers, for enhancing adhesion of the mixture comprising hydraulic cement, the plurality of aggregates, water and the lime-free admixture composition to a plurality of substrates; providing ~~a plurality of~~ at least one adsorbents wherein the adsorbent is selected from the group consisting of Perlite, calcium carbonate and diatomaceous earth for providing a dry lime-free admixture composition when the lime-free admixture comprises liquid ingredients; providing ~~a plurality of~~ at least one water retention agents wherein said water retention agent is selected from the group consisting of isoprene polymer rubbers, isoprene copolymer rubbers, styrene-butadiene

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copolymer rubbers, polyvinyl acetate/vinyl versatate copolymers, polyethylene oxide  
polymers, hydroxylpropyl methyl cellulose polymers, hydroxylethyl methyl cellulose  
polymers, polyethylene glycol polymers, polyethylene glycol copolymers,  
polyacrylamide polymers, polyacrylamide copolymers, xanthan gums and guar gums, for  
reducing the amount of water that is added to the mixture comprising hydraulic cement,  
the plurality of aggregates and the lime-free admixture composition; and providing a  
plurality of at least one pumping aids wherein said pumping aid is selected from the  
group consisting of polyethylene oxide polymers, hydroxylpropyl methyl cellulose  
polymers, hydroxyl ethyl methyl cellulose polymers, polyethylene glycol polymers,  
polyethylene glycol copolymers, polyacrylamide polymers, polyacrylamide copolymers,  
xanthan gums, guar gums, for controlling the rheology of the mixture comprising  
hydraulic cement, the plurality of aggregates, water and the lime-free admixture  
composition.

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30. (amended) The method for using lime-free admixture compositions to make masonry compositions according to claim 28 further comprising the steps of: adding a first quantity of water into a mixer; blending a quantity of hydraulic cement with the water in the mixer; blending a quantity of the lime-free admixture composition into the water and hydraulic cement in the mixer; blending a first quantity of a plurality of aggregates into the water, hydraulic cement and the lime-free admixture composition in the mixer; blending a second quantity of water to the mixer; blending a second plurality of aggregates to the mixer; and mixing the mixture comprising water, the hydraulic cement, the admixture composition and the plurality of aggregates in the mixer for a period of time of not less than about 4 hours minutes.

31. (amended) The method for using lime-free admixture compositions to make masonry compositions according to claim 30 wherein the first quantity of water comprises about 7% to about 8% of the mixture; the quantity of hydraulic cement comprises about 20% to about 23% of the mixture; the quantity of lime-free admixture composition comprises about 0.1% of the mixture; the quantity of the first plurality of aggregates comprises about 30% to about 34% of the mixture; the second quantity of water comprises up to less than about 2% of the mixture; and the second quantity of the plurality of aggregates comprises about 34% to about 41% of the mixture.

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32. (new) The method for using lime-free admixture compositions according to claim 31 wherein a combination of the lime-free admixture composition, hydraulic cement, a plurality of aggregates and water is applied on a substrate as a masonry composition selected from the group consisting of a concrete composition, a mortar composition, a stucco composition and a grout composition.

33. (new) The method for using lime-free admixture compositions according to claim 31 wherein a combination of the lime-free admixture composition, hydraulic cement, a plurality of aggregates and water is applied as a stucco composition directly to expanded polystyrene substrates.